

## HEPATOSCOPY AND ASTROLOGY IN BABYLONIA AND ASSYRIA.

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In any general study of the subject of divination we must distinguish between two forms which for want of a better designation we may distinguish as voluntary and involuntary. Under voluntary divination is meant the act of deliberately seeking out some object or means through which one may hope to pierce the unknown future, hidden from the ordinary gaze. The placing of marked arrows before the image of a deity, and according to the ones drawn by lot, to determine what the god may have in mind or what his pleasure may be is an illustration of voluntary divination as practiced among the ancient Arabs.<sup>1</sup> Sending out birds selected for the purpose and noting the direction and manner of their flight<sup>2</sup> may be instanced as another procedure of direct divination. Among the Babylonians and Assyrians, the common method of voluntary divination was the examination of the liver of the sacrificial animal—invariably for this purpose a sheep—and, according to signs noted in the various parts of that organ, to diagnose the intentions of the gods as the arbiters of human fate and as the powers presiding over all occurrences on earth.

Involuntary divination, on the other hand, rests on the interpretation of all manner of signs and phenomena that without being sought out force themselves on our notice. Preeminent among such signs is the observation of the phenomena of the heavens, primarily the movements and aspects of the sun, moon and planets with the gradual extension to the observation of clouds, of constellations and of single particularly prominent stars—as practiced by the cultural

<sup>1</sup> Wellhausen, "Reste Arabischen Heidenthums," p. 126.

<sup>2</sup> Wissowa, "Religion der Römer," p. 457, note 3.

nations of antiquity.<sup>3</sup> In addition to this branch of involuntary divination, we have the significance attached to diverse occurrences that by their more or less unusual or striking character attract attention or that for any other reason were regarded as fraught with some special importance. The interpretation of dreams falls within this category. Monstrosities among human beings and animals form another subdivision, while peculiar actions among animals—snakes, dogs, ravens, locusts and the like—further extend the scope of involuntary divination until it becomes practically boundless. All the little mishaps and accidents of daily life were looked upon as signs, indicative of the disposition of the gods towards men, and in a still larger sense, as affecting the general welfare, were storms, floods, swollen streams, climatic disturbances and more the like.

In order to differentiate between these two methods of divination we may designate the signs derived from voluntary divination as omens, and those obtained from involuntary divination as portents, while within the field of involuntary divination two broad divisions may be recognized, the one represented by portents connected with the phenomena of the heavens, including clouds, storms and rains, and such as are connected with terrestrial phenomena. In grouping the portents derived from the observation of the phenomena of nature under the general heading of astrology, it must therefore be borne in mind that the term includes more than the mere study of the stars, but so far at least as Babylonia and Assyria are concerned, there is no distinction between the character of the interpretations offered for the phenomena of the heavens in the narrower sense, and such phenomena as are merely associated with the heavens. For the Babylonians and Assyrians, as for the nations of antiquity in general, heaven is not very far removed from the earth.<sup>4</sup> It was supposed to begin where the solid earth came to an end and indeed the tops of mountains so frequently enveloped in clouds appear to have been regarded as bordering on the domain of heaven if not

<sup>3</sup>Dr. J. G. Frazer calls my attention to the fact that astrology in any proper sense is not found among peoples of primitive culture.

<sup>4</sup>This view underlies the Biblical story of the building of the Tower of Babel (Genesis, chapter XI.), as is shown by the circumstance that the task of building a tower which should reach to heaven is not looked upon as an impossible task but as a wicked one.

actually a part of it. Hence to place the seat of the gods on the tops of mountains, as was so frequently done by nations of antiquity, was equivalent to assigning them to the heavens.

Confining ourselves to Babylonia and Assyria, we find that although divination through the interpretation of terrestrial phenomena—dreams, monstrosities, actions of animals, mishaps, swollen streams, etc., etc.—also play a prominent role and that within the field of voluntary divination we have by the side of hepatoscopy (or divination through the liver), other procedures such as the interpretation of the action of oil bubbles in a basin of water,<sup>5</sup> the two chief methods of divination, forming part of the official cult, are Hepatoscopy and Astrology.<sup>6</sup> Both forms were developed into elaborate systems marked by definite rules of interpretation, consistently and logically applied. Extensive collections of omens and portents were compiled by Babylonian and Assyrian priests attached to the temples, in which all signs noted on the liver of sheep and all manner of phenomena observed in connection with sun, moon, planets, constellations and stars on the one hand, and with clouds, storms, rains and floods on the other, were entered together with the interpretation of the signs. The evident endeavor of the compilers was to make the collections as comprehensive as possible so as to provide for all contingencies, since the purpose of the collections was to serve as guides and handbooks for the priests in their practical labors as well as text-books in instructing the pupils of the temple schools. As a consequence, considerable skill and ingenuity were displayed in arranging the omens and portents systematically so as to facilitate their use. On the other hand, while the signs noted were primarily based on actual cases, the theoretical factor enters largely into play. This led to many signs being entered in both classes of divination

<sup>5</sup> See Hunger, "Becherwahrsgagung bei den Babyloniern" (Leipzig, 1903).

<sup>6</sup> For details with copious translations of texts see the writer's "Religion Babyloniens und Assyriens," parts 10 to 14, as well as various articles on special points such as "The Signs and Names for the Liver in Babylonian" (*Zeitschrift für Assyriologie*, XX., pp. 105-129); "The Liver in Antiquity and the Beginnings of Anatomy" (*University of Pennsylvania Medical Bulletin*, January, 1908, and Trans. of the Phila. College of Physicians, 3d Series, XXIX., pp. 117-138); "Sign and Name for Planet in Babylonian" (PROCEEDINGS OF THE AMER. PHILOS. SOCIETY, XLVII., pp. 141-156).

which represent such as in the opinion of the priests *might* occur. Certain rules of interpretation having been devised, based on actual occurrences following upon the signs noted, these rules were applied to contingent cases which might occur; and often in astrological texts, signs are even entered which have no practical significance at all but purely a theoretical interest as illustrations of the extremes to which the system of interpretation was pushed.

In the case of both methods the interpretations have reference almost exclusively to the general welfare and not to the individual, to crops, war, pestilence, victory, defeat, famine, plenty, favorable or unfavorable climatic conditions and the like. The individual plays a very minor role, and when he is introduced, in most cases it is the king who is directly mentioned or indirectly referred to. Even the welfare of the king is bound up with the welfare of the country under the view of kingship which continues to hold good till the end of the Babylonian-Assyrian control and according to which the king's welfare; because of his peculiar relationship to the gods, conditions the general prosperity and happiness;<sup>7</sup> and this applies also to signs connected with a member of the royal household. It is because of this bearing of both forms of divination on the general welfare that they form integral parts of the official cult. Especially is this the case with the rites of hepatoscopy which, as texts from the days of the Assyrian empire show, formed part of a regular ritual.<sup>8</sup>

More important, however, than this aspect of hepatoscopy and astrology in Babylonia and Assyria is the circumstance that both methods rest upon a well-defined theory and are therefore not to be viewed as merely arbitrarily chosen devices. In the case of hepatoscopy the underlying theory may be summed up as follows. The sacrificial animal on being accepted by the deity to whom it is offered is assimilated to the deity. The deity becomes one with it, much in the same way as the one who partakes of an animal becomes part of that animal, or the animal part of him. The soul of the animal is thus put in harmonious accord with the soul of the god.

<sup>7</sup> See J. G. Frazer, "Lectures on the Early History of Kingship."

<sup>8</sup> See Jastrow, "Religion Babyloniens und Assyriens," II., pp. 174 seq. and 300 seq.



The two agree as two watches regulated to be in perfect unison. If, therefore, one can read the soul of the animal, one enters at the same time into the inner being of the god. Now according to a view widespread still among people living in a state of primitive culture, the seat of life is in the liver, which is not only the organ of emotional activity but of intellectual functions as well, the source of all emotions high and low, of thought, will and all manifestations of what we ordinarily call soul life.<sup>9</sup> From this point of view the liver is the seat of life and of the soul, as the ancients conceived vitality and its inward and outward phenomena.

The combination of these two conceptions (1) of the liver as the seat of the soul and (2) of the assimilation of the soul of the sacrificial animal to the soul of the deity to whom it is offered and who accepts it, leads to the conclusion that if one is able to read the soul of the animal as revealed in the condition of the liver and of the signs thereon, the soul including, therefore, the will and intention of the deity is revealed. Through the liver of the sacrificial animal one enters as it were into the workshop of the gods. The mind of the god is reflected in the liver of the sacrificial animal like an image in a mirror—to use the figure introduced by Plato in an interesting passage of the *Timaeus*<sup>10</sup> bearing on divination through the liver.

As for the system of interpretation of the signs noted it revolves largely around a more or less natural association of ideas. The chief parts of the liver to which attention was directed being the right and left lower lobes, the upper lobe with its two appendices, the larger one known as the *processus pyramidalis* and the smaller

<sup>9</sup> For further details regarding this view of the liver which also underlies hepatoscopy among the Etruscans, Greeks and Romans see Jastrow, "Religion Babyloniens und Assyriens," II., pp. 213 seq. In a special article (shortly to be published) on "The Liver as the Seat of the Soul" I have set forth the historical development of the location of the soul in the liver, in the heart and in the head successively. The second stage, though reached by the Babylonians and Assyrians, never found expression in Hepatoscopy, whereas among the Romans from a certain period on, the heart and occasionally the lungs and even the milt were also examined. The third stage was reached too late for incorporation into the divination rites, but in phrenology as an extra-official pseudo-scientific form of divination we have the outward expression of the belief which placed the soul in the brain.

<sup>10</sup> § 71 C.

one as the *processus papillaris*, the gall-bladder, the cystic duct, the hepatic duct, the common bile-duct, the hepatic vein and the "liver gate" (*porta hepatis*). A swollen gall-bladder was interpreted as pointing to an enlargement or increase of power, a long cystic duct to a long reign, a depression in the liver gate to a decrease in power and so forth. Through the further distinction between right and left, the former representing the favorable side, the latter the unfavorable side, the signs in question referred to the king's side or to the enemy's side, as the case might be. Besides the parts of the liver, markings on the liver—holes, lines, and depressions—due largely to the traces on the liver surface of the subsidiary ducts and veins, were accorded a special significance. According to the shape of these markings, frequently fantastically pictured as weapons of the gods, an interpretation, likewise based on association of ideas, was offered and in this way the field of hepatoscopy was further extended. No two livers were ever exactly alike, and it will readily be seen how in the course of time the collections of signs with their interpretation would grow to huge proportions, and the opportunity thus given for the imagination and fancy of the divining priest—the *bârû* or "inspector"<sup>11</sup> as he was called, to roam over a boundless territory. To the credit of the Babylonian and Assyrian priests be it said that so far as the evidence goes, they applied the elaborate and complicated system devised by them logically and consistently. They did not hesitate to announce to the kings an unfavorable result of the examination of the signs. Grouping all the signs noted together, if the unfavorable signs predominated, a second sheep was offered and the liver examined, and if the result of this diagnosis was also unfavorable, the omens were taken for a third time. The frequency with which in official reports to the kings unfavorable prognostications are set forth<sup>12</sup> warrants the con-

<sup>11</sup> The underlying stem is the common term for "to see." The *bârû* as "the seer" was the one who by means of an "inspection" foretold the future. The term was extended also to the "inspector" of the heavens or the astrologer. In Hebrew we have an equivalent *rô'êh* and in an article "*Rô'êh* and *Hôzêh*" (*Journal of Biblical Literature*, Vol. XXVIII., part I) I have tried to show that the *rô'êh* like the *bârû* was originally an "inspector" of some object through which the future was divined.

<sup>12</sup> Jastrow, *o. c.*, II., p. 287 seq. for examples.

clusion that the diviners were far removed from resorting to deception and to tricky devices such as are reported of augurs among Greeks and Romans.<sup>13</sup> Indeed the mere circumstance that hepatoscopy prevailed uninterruptedly from the earliest to the latest periods, and that on all important occasions it was resorted to as the official means of ascertaining the will and intentions of the gods, is a testimony to the conscientious manner in which the priests must have carried out their tasks.

In passing from hepatoscopy to astrology—the term always used in the larger sense above pointed out<sup>14</sup>—we pass also from the domain of popular and to a large extent primitive beliefs to a domain of speculation that in comparison justly merits the designation scientific. Astrology in Babylonia and Assyria rests on the identification of the heavenly bodies with the gods of the pantheon. While in the case of the personification of the sun and moon as deities we are still within the province of popular and primitive conceptions, we pass beyond this province in the extension of such personification to the planets and stars. It lies in the nature of animism, which is certainly to be regarded as a stage in the development of religious beliefs, even if it is not admitted to be the starting-point of such development, not to distinguish sharply between the manifestation of a personified power and the seat of that power. The sun is at once the sun-god and the seat of that god; and the same applies to the moon. Both, accordingly, have their places in the heavens. Storms, rains, thunder and lightning likewise come from the heavens and hence the gods representing the personification of these powers also have their seats in the heavens. Such conceptions are a direct outcome of popular and primitive methods of thought, and we may perhaps go a step farther and assume that by analogy other powers whose manifestations proceeded from a hidden source were assigned to the heavens, but this step is far removed from the identification of *all* the stars with deities and still farther from projecting

<sup>13</sup> See, *e. g.*, the anecdotes related by Polyænus, "Strategicon," IV., 20, and Frontinus, "Strategematon," I., XI., 15. Compare also Hippolytus, *Refutatio*, IV., 40.

<sup>14</sup> The earliest reference occurs in the inscriptions of Gudea (c. 2500 B. C.), the latest in the inscriptions of Nabonidus, the last king of Babylonia. See Jastrow, *o. c.*, II., p. 273 and 247 seq.

<sup>15</sup> See above, p. 647.

the seats of *all* gods and goddesses on to the heavens. Again, the influence of moon and sun, as well as storms with their accompanying phenomena, on the fate, welfare and happiness of mankind was so apparent as to force itself upon the notice even of people living in a state of primitive culture; and when we pass to the higher stages of nomadic, semi-nomadic and agricultural life, the dependence of the country's prosperity and of the individual's welfare upon sun, moon and climatic conditions would be correspondingly increased. The observation of the movements and aspects of sun and moon would follow as a natural consequence, and we may suppose that at a comparatively early stage in cultural development crude and sporadic attempts might be made on the basis of empirical observations to select the favorable moment for such actions as the undertaking of a journey, for hunting or war, for the planting of seeds, for the gathering of the harvest or even for the pairing of domesticated animals. The influence of the planets and stars, however, would be less obvious and indeed until a comparatively advanced stage of intellectual development would not be recognized at all. Astrology in the proper sense, therefore, is not found among peoples of primitive culture<sup>16</sup> who at the most are guided by certain empirical considerations in their enterprises.

The projection of the seats of all the gods on the heavens can only have arisen in people's minds as the outcome of theoretical speculation. This, to be sure, represents merely the extension by analogy of the primitive conception of sun, moon and storms, but an extension which for the very reason that it is neither obvious nor the result of actual experience, lies outside of the range of early thought. The views of Cumont<sup>17</sup> and Boll<sup>18</sup> may, therefore, be unhesitatingly accepted that astrology everywhere represents a *scientific* view of the universe—scientific of course in a relative sense, and in comparison with the conceptions that underlie hepatoscopy or with the significance attached to universal occurrences on earth or to the

<sup>16</sup> See above, p. 647, note 3.

<sup>17</sup> *Les Religions Orientales dans le Paganisme Romain* (Paris, 1907), pp. 197 seq.

<sup>18</sup> "Die Erforschung der antiken Astrologie" (*Neue Jahrbücher für das Klassische Altertum*, I., Abt., Bd. XXI.), p. 108 seq.



mishaps and accidents of daily life. Indeed, one may safely go a step further and set up a contrast between hepatoscopy and astrology corresponding to the difference nowadays between the popular views of the universe which are still so largely controlled by superstitious beliefs and crude speculations—instance the hold that astrology, phrenology, chiromancy, clairvoyance, dreams and belief in the power of ghosts still have upon the masses,—and those held by scientific thinkers. The astrological system of Babylonia and Assyria, which is the earliest known to us, might be described as taking the place in antiquity that in modern times is taken by the “Darwinian” theory of evolution in so far as it is the product of the schools and not of popular conceptions.

It may reasonably be supposed that the recognition of the regular movements of the planets and that within certain periods they pass through a well-defined course as do the sun and moon, was the decisive step which led to the departure from along the lines of popular conceptions. With the planets thus placed on a par with sun and moon, it was a natural sequence to regard them also as gods, or, what amounted to the same thing, as the seats of gods, and to endow them with the power to control occurrences on earth. In the oldest astrological texts, as a matter of fact, we find the five planets already identified with the chief gods of the Babylonian-Assyrian pantheon, Jupiter being known as Marduk, Venus as Ishtar, Saturn as Ninib, Mercury as Nebo and Mars as Nergal.<sup>19</sup> This identification in itself is sufficient to establish the advanced character of the entire astrological lore, for the gods in question, according to the popular conceptions and even in the official cult, stand in no connection with the stars. Marduk, Ninib and Nergal are originally solar deities. Nebo appears originally to have been a water deity,<sup>20</sup> while Ishtar is the earth goddess, the symbol and personification of fertility in general. In thus being identified with the planets, the original character of the deities in question is entirely lost sight of. The identification, therefore, represents a break with popular conceptions and with the traditions that had

<sup>19</sup> Kugler, “Sternkunde und Sterndienst in Babel,” I., p. 8 with the corrections on pp. 221 and 286.

<sup>20</sup> Jastrow, *o. c.*, I., p. 118.

gathered around these deities. In view of this, it is clear that in dealing with Babylonian-Assyrian astrology we have to do with the theories of the theologians or priests as the representatives of advanced and abstract thought, and not with popular notions. Moreover, the choice of the deities in question and the order in which they are enumerated when introduced as equivalents of the planets are further indications of the speculative spirit which led to their identification with the planets, and also of the time when this identification took its rise. Jupiter-Marduk is always mentioned first and this precedence is evidently a reflection of the period when Marduk was regarded as the head of the pantheon, *i. e.*, the period after Hammurabi with whom as the unifier of the Euphratean states, the city of Babylon as the capital of the empire assumes the definite position it continued to hold till the destruction of the neo-Babylonian kingdom by Cyrus in 539 B. C. The pantheon as constituted during or after the days of Hammurabi assigns to Marduk as the patron deity of Babylon the first position. Marduk takes the place held by Enlil of Nippur and subsequently, as would appear, by Ninib.<sup>21</sup> The other great gods of the pantheon, as found in the Hammurabi period, are precisely the ones identified with the remaining four planets, Ishtar, Ninib, Nebo and Nergal together with Sin the moon-god, Shamash the sun-god and Adad-Ramman the storm-god. The basis upon which Babylonian-Assyrian astrology rests thus assumes the definite formation of a pantheon and moreover the particular form of the pantheon that marks the Hammurabi period, *i. e.*, after 2000 B. C. This does not necessarily mean that astrology dates in Babylonia from this period, for it is possible that there was an earlier series of identification of gods with planets, but that the astrological texts known to us do not revert to originals older than the days of Hammurabi. There are indeed references in the inscriptions of Gudea which would point to the practice of interpreting the signs of the heavens at this earlier period<sup>22</sup> and it may well be therefore that the priests long before Hammurabi had started on the course of speculation which culminated in placing the seats of *all* the gods in the starry firmament. But whatever the age of Babylonian-Assyrian

<sup>21</sup> See Jastrow, *o. c.*, I., p. 452 seq.

<sup>22</sup> See Jastrow, *o. c.*, II., p. 423.

astrology may be, it must have involved the dissociation of the gods identified with planets and stars from their original character as solar, agricultural, water or chthonic deities, and it is also reasonable to assume that it is subsequent to the period when, by a process of selection, certain deities, though originally local in character, were differentiated from the many other local gods and became members of a definitely constituted pantheon consisting of a limited number of great gods and of a larger number of minor deities.

Before passing on to another phase of the subject, it may be proper to point out the more specific factors involved in the identification of the planets with certain gods—all confirmatory of the general thesis that astrology represents a system devised in the schools, and that its very artificial character is indicative of its being a "scientific" and not a "popular" product. Marduk was identified with Jupiter by the natural association which led to assigning the head of the pantheon to the most striking of the planets known to the ancients.<sup>23</sup> In the case of Venus it was probably her double character as morning and evening star that suggested the identification with Ishtar, who as the goddess of fertility likewise presents two aspects in the two divisions of the year—the producer of life and vegetation in the spring and summer, and the one who withdraws her favors in the fall and winter.<sup>24</sup> The dark-red color of Mars appears to have been the factor which prompted the identification with Nergal, the god of the burning summer solstice, of pestilence and death. Nebo becoming in the pantheon of Hammurabi the son of Marduk,<sup>25</sup> a natural association of ideas would lead to assigning him to the smallest of the planets. There would

<sup>23</sup> See Kugler, *o. c.*, p. 14, note 1.

<sup>24</sup> This double character of Ishtar underlies the famous myth commonly known as Ishtar's descent into the lower regions. See Jensen, "Keilinschriftliche Bibliothek," VI., 1, pp. 80-91. The destructive character of Ishtar appears also in the myth of the slaying of Tammuz and in the other capacity of Ishtar as a goddess of war. See Jastrow, *o. c.*, I., pp. 82 seq.

<sup>25</sup> See Jastrow, *o. c.*, I., p. 120. As a concession to the predominance of the Nebo cult in the days of the neo-Babylonian dynasty, we find in the astronomical texts of the latest period (after 400 B. C.) a change in the order of the planets, Nebo-Mercury assuming the third place, *i. e.*, after Marduk and Ishtar, instead of Ninib-Saturn who is assigned to the fourth place. See Kugler, *o. c.*, p. 13.

thus remain for Ninib the planet Saturn whose large size would have been regarded as appropriate for a solar deity once occupying the position that afterwards was assumed by Marduk.

The planets thus representing the great gods of the pantheon, the prominent fixed stars were associated with the minor deities and while in the case of many of the stars occurring in the purely astronomical texts which belong to the later and latest periods of Babylonian culture,<sup>26</sup> no definite association with specific deities was worked out, yet it is to be borne in mind that all the stars were regarded as gods in a logical and consistent extension of the principle which gave rise to astrology as a system of divination. It is one of the many merits of Hugo Winckler<sup>27</sup> to have demonstrated as one of the tenets of the Babylonian-Assyrian conception of the universe a perfect correspondence between occurrences on earth and phenomena in heaven.<sup>27a</sup> Earth and heaven stand related to each other as a reflection in a mirror to the original which is reflected. Since all that happens is due to the gods, it follows from the speculative view which places the gods in the heavens that occurrences on earth are prepared in the heavens. What one sees in the heavens is therefore the activity of the gods preparing the events on earth. The constantly changing aspect of the starry universe thus finds a natural explanation. The movements of sun, moon and planets as well as the ever-varying aspects of clouds and all other phenomena of a striking character were the external symptoms of the never-

<sup>26</sup> See Kugler, "Sternkunde," p. 2 and elsewhere whose views have been accepted by Boll, Eduard Meyer, Schmidt and many others. See Jastrow, II., p. 432, note 1, where I have set forth my own position on the important question as to the age of astronomy in Babylonia and Assyria with an endeavor to do justice to both sides of the burning problem.

<sup>27</sup> "Himmels und Weltenbild der Babylonier" (Leipzig, 1893, 2<sup>te</sup> Auflage) and numerous other monographs of this scholar. See Jastrow, *o. c.*, II., p. 418, note 2.

<sup>27a</sup> The same view prevails among the Indians of Mexico according to Preuss "Die Astralreligion in Mexico in vorspanischer Zeit und in der Gegenwart" (Transactions of the 3d International Congress for the History of Religions I., p. 36 seq.). It is to be noted that also among the Mexican Indians the astral cult included the worship of storm and rain deities (*l. c.* p. 38 seq.). Preuss is mistaken, however, in regarding this astral religion as "primitive." On the contrary, it betrays all the earmarks of a cult devised by priests on the basis of elaborate cosmical speculations.



ceasing divine activity. The theory of the correspondence between heaven and earth was carried by the theologians of the Euphrates Valley to its logical consequences. Myths and legends were so shaped under the influence of the theory as to admit of a double interpretation, the one having reference to the movements and aspects of the heavenly bodies, the other to occurrences whose scene is placed on earth. A series of acts of creation on earth is counter-balanced by a corresponding series in the heavens.<sup>28</sup> The heavens were divided off into districts with mountains, rivers and cities corresponding to those on earth. The famous Gilgamesh Epic—a composite tale with almost equal proportions of nature myth, legendary lore and dimmed historical traditions—admits likewise of a double interpretation, the scenes applying equally to the movements of heavenly bodies and to events on this globe;<sup>28a</sup> and the same holds good for such tales as the story of Etana and the Adapa myth which, besides betraying the work of theological schools in making the tales the medium of conveying doctrinal teaching,<sup>29</sup> are so constructed as to conform with the fundamental principle of a correspondence between heaven and earth.

Corresponding, therefore, to the theory underlying Babylonian-Assyrian hepatoscopy as above set forth, we have in the case of astrology likewise a theory which lifts the endeavor to divine the future through the observation of the planets and stars beyond mere caprice and arbitrary guesswork. Granted the underlying assumption that there is a perfect correspondence between heaven and earth, it follows that if one can grasp the meaning of the aspects and movements of the heavenly bodies one can recognize clearly what the gods are doing, and hence what the future is to be, which, since it is in the hands of the gods, is merely the outcome of their activity as revealed in the heavens. Astrology is, therefore, like hepatoscopy a means of entering into the workshop of the divine

<sup>28</sup> See Zimmern, "Biblische und Babylonische Urgeschichte" (3<sup>te</sup> Auflage, Leipzig, 1903).

<sup>28a</sup> See Kugler, *die Sternenfahrt des Gilgamesch* (Stimmen aus Maria-Laach, 1904. Heft. 4).

<sup>29</sup> See Jastrow, "Religion of Babylonia and Assyria" (Boston, 1898), pp. 519-555, and in greater detail in the writer's next volume. "Temples, Myths and Cults of Babylonia and Assyria."

will and intention. Through the planets and stars or rather in the planets and stars one sees the gods at work and if one knows what they are contriving, one knows what occurrences will take place on earth. Again, as in the case of hepatoscopy, past experience and association of ideas are the two main factors involved in the system of interpretation gradually devised by the Babylonian-Assyrian *bârû* priests or "inspectors" in their capacity as astrologers or "inspectors" of the heavens. A favorable event or a favorable outcome of a crisis following upon certain aspects of the heavenly bodies would be made the basis of a favorable prognostication on another occasion when the same conditions presented themselves; and the prognostication would be made without reference to the particular event following upon the original observation. It was not the event that was of importance but merely the circumstance whether it was favorable or unfavorable. On the basis of this experience phenomena were entered as pointing to favorable or unfavorable occurrences, and these entries served as a guide to the priests in the task imposed upon them of divining the future. But while the principle of *post hoc propter hoc* entered largely into the formation of collections of astrological omens—as it did in the collections of hepatoscopical omens<sup>30</sup>—the natural or artificial association of ideas was even a more prominent factor. Normal conditions as a rule were interpreted as favorable. Thus, if the moon and sun appeared in conjunction at the proper time, a favorable prognostication was indicated. If the conjunction took place at a time earlier or later than the expected moment it forboded disaster of some kind. Again, by a perfectly logical association, in case the new moon was seen on the first day of the month, *i. e.*, was not obscured by clouds, the omen was of a favorable character; if, however, clouds obscured it so that the new moon was not visible, difficulties of some kind might be expected. Days were entered as favorable or unfavorable according to these and numerous other indications and though in the case of a specific inquiry of the gods recourse was had to hepatoscopy in order to ascertain what a deity had in mind with regard to the particular situation in question, the signs

<sup>30</sup> See Jastrow, "Religion Babyloniens und Assyriens," II., p. 251 seq., for examples.

involuntarily forced on one's notice by conditions prevailing in the heavens were not and could not be neglected. A few examples from astrological texts will suffice for our purposes. Thus we read in an official report of the Assyrian period:<sup>31</sup>

"If the moon is seen on the first day, good faith and stable conditions in the land. If the first day is abnormally long, the king will have a long reign."

The prognostication is clearly based on a natural association of ideas. From the fact that the new moon is visible on the day set for it, the conclusion is drawn that as the moon kept good faith, as it were, so the king may expect those entrusted with any mission to be faithful and that his subjects in general will be loyal. By a still clearer association long days point to a long reign.

Another report states:<sup>32</sup>

"If the moon is seen out of the expected time, prices will be low.<sup>33</sup> The moon was seen with the sun on the twelfth day. If moon and sun are seen together at an abnormal time, a strong enemy will oppress the land, but the king of Babylonia will accomplish the overthrow of his enemy."

The normal period when moon and sun should be seen at the same time in the heavens is on the fifteenth day—the moment of opposition. The *bârû*-priest reports, however, that the appearance of moon and sun took place already on the twelfth day—earlier, therefore, than was expected. The abnormal condition points to some misfortune and two omens that are to be regarded as extracts from actual collections are introduced, the one referring to economic conditions, the other to political affairs, and though both are unfavorable, yet in the second instance it is added that ultimately the enemy will be overthrown. In the case of such specific prognostications we are perhaps justified in concluding that they rest on past experience. In other words, on some occasion when sun and moon were seen together in the heavens earlier than the fourteenth or fifteenth day of the month, prices went down or an enemy entered the land but was eventually vanquished. The occurrences were

<sup>31</sup> Thompson, "Reports of the Magicians and Astrologers of Nineveh and Babylon" (London, 1900), Vol. I., No. 1.

<sup>32</sup> *o. c.*, No. 119.

<sup>33</sup> Low prices were regarded as an unfavorable condition in Babylonia and Assyria.

accordingly entered as unfavorable in the collections, and when the same conditions again took place, the fact was reported to the king who would thus be warned either against undertaking an expedition or at least would be prepared for some disaster or discomfiture.

To even partially enumerate the phenomena noted in the astrological collections would carry us too far, and it will easily be seen how in the course of time the collections would grow to huge proportions.<sup>34</sup> Halos around the moon or sun, moon and sun eclipses, thunder in certain months or on certain days, one planet or the other standing within the halo around the moon, the appearance of Venus or some other planet at the heliacal rising or at some other point in its course, the appearance of the moon's horns or crescent, the position or appearance of a certain planet or of a certain star are among the phenomena entered and here the prognostications vary according to the season of the year, according to the month or day of the month.<sup>35</sup>

Without losing sight of the purely artificial character of the system of interpretation devised by the Babylonian theologians, one should not withhold one's meed of praise for the consistency with which the elaborate system was carried out for a long stretch of centuries, as well as for the patience displayed in the compilation of the extensive collections of omens of which only portions have come down to us. Moreover, the Babylonian-Assyrian astrology shows that even a superstition can harbor an exalted idea, for the result of the continuous observation of the movements and aspects of planets and stars must have been to impress at all events the priests with the realization of the reign of law in the universe; and it is, assuredly, a decided gain to realize that even the activity of the gods is under the sway of a fixed order. In striking contrast to hepatoscopy which rests upon the arbitrary nature of the gods and merely aims to fathom their caprice, astrology starts with the recognition of the

<sup>34</sup> The best known of such astrological collections in Ashurbanapal's famous library is a series known from the opening words as "When Anu and Enlil" and comprising more than seventy tablets. See Jastrow, *o. c.*, II., p. 424, notes 3 and 4, and copious examples beginning p. 458.

<sup>35</sup> In their ambition to make the collections as complete as possible, the *bârû*-priests even enter phenomena that never occurred, and some that never could have occurred.



fact that the gods as represented by the planets and stars act in concert. The phenomena of the heavens suggest *united* action in place of individual caprice, and the general regularity of the movements of heavenly bodies must soon have suggested to the priests the view that divine government of the universe rests at least to a large extent upon law and order. We may properly assume that this aspect of astrology by which, through constant observation, the permanent impression of awe and reverence for the grandeur of heavenly phenomena was deepened, was an important factor in maintaining the faith in the stars as manifestations of the divine will and of the intentions of the gods towards mankind. The Babylonian *bârû*-priest could reëcho the sentiment of the Psalmist (19, 1-2) who, carried away by the sight that greeted him in the heavens, exclaimed, "The heavens declare the glory of God and the firmament sheweth his handywork. Day unto day uttereth speech and night unto night sheweth knowledge." To the *bârû*-priest the heavens spoke by day and night, and it was his privilege to interpret to others the knowledge revealed to him.

Attention has already been directed<sup>36</sup> to the fact that in the case of both hepatoscopy and astrology the interpretations of the omens have reference exclusively to the public welfare, to the condition of the crops, to pestilence, to war or victory and that the introduction of the king likewise falls within this category. More than this, the interpretations in both systems are substantially the same, so that a dependence of one system upon the other becomes at least a probable hypothesis. A detailed study of the two systems leads indeed to a confirmation of this thesis and since hepatoscopy, as has been shown, is an outcome of popular conceptions and exists in full force in the earliest period of Babylonian history, it is reasonable to suppose that it was the first to be developed and that the astrological system represents an adaptation of the principles underlying the interpretation of signs on the liver to signs noted in the heavenly bodies. The "scientific" view of the universe that is closely bound up in the astrological system represents, as is obvious, a later stage in cultural development than the "popular" conception upon which hepatoscopy rests. In

<sup>36</sup> See above, p. 649.

the name given to the planets in Babylonia we have, I venture to think, a direct proof of this dependence of astrology upon hepatoscopy. It has always been a puzzle to scholars that the common designation for planet should have been a compound ideograph,<sup>37</sup> the two elements of which signify "sheep" and "dead." Attempts to furnish a satisfactory explanation have failed and the interpretation offered by Babylonian scribes as "causing the death of cattle,"<sup>38</sup> while confirming the division of the sign into the two elements in question, is purely fanciful and is of value chiefly as showing that the real origin of the designation had already in ancient times become obscured. Through a syllabary (II. Rawlinson, Pl. 6, 4 c-d) we learn that the compound sign (Lu-Bat) is to be read *bi-ib-bu* and the context in which the word occurs<sup>39</sup> is sufficient to show that it is one of the names for "sheep." This, moreover, is confirmed by the fact that the first element, Lu, with or without the addition of the sign for "male" designates the "sheep." Now, the second element (Bat) has also the force of *têrtu*, "omen,"<sup>40</sup> the explanation

<sup>37</sup> Lu-Bat. For a full discussion see a special article by the writer "The Sign and Name for Planet in Babylonian" in the PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL SOCIETY, Vol. XLVII., pp. 141-155. It is also to be noted that while all the planets are designated as Lu-Bat or *bibbu*, there are two, Mercury and Saturn, to whom the designation is specially applied. On the reason for this as well as for the explanation of the Babylonian names for Mercury (Lu-Bat Gu-Ud) and Saturn (Lu-Bat Sag-Uš) see the article just referred to, in which on p. 142 a reference should have been added to Zimmern, "Keilinschriften u. das alte Testament," p. 622, seq.

<sup>38</sup> *muš-mit bu-lim* (V. Rawlinson, Pl. 46, Nr. 1 (rev.), 41), in which equation Lu is entered as the equivalent of *bulu* "cattle" and Bat as III., 1 of *mātu* "cause the death" or "kill." The artificial character of the explanation is revealed by the unwarranted extension of Lu in the general sense of "cattle," nor can Bat without some further qualifying prefix mean "cause to die" but merely "to die" or "to be dead." Lu-Bat could have the force of "sheep that is dead" or "sheep that is killed," but never "sheep (or 'cattle') that kill."

<sup>39</sup> It is followed by *a-tu-đu* "goat" and *sap-pa-ru* "mountain goat." Note also that l. 1, a-b Lu = *kir-ru*—a common term for "lamb." Dr. Rudolf Eisler finds in the double sense of the Semitic stem *āmār* "word" and "sheep" a further support for the thesis here set forth ("Origin of the Eucharist," p. 10—an address before the Third International Congress for the History of Religions at Oxford, Sept. 18, 1908.)

<sup>40</sup> See II., Rawlinson, Pl. 27, No. 2, 46 obv. c-d. Ur-Bat = *ter-tum ša ha-se-e, i. e.*, "omen of the liver," the first element (Ur) being the common

for which is to be sought in the circumstance that through the sacrificial animal, killed for the purpose, an omen was secured. The combination Lu-Bat, "dead sheep," is therefore intended to convey the notion of a "sacrificial sheep," offered to the deity as a means of securing an "omen." So prominent is the part played by hepatoscopy in the Babylonian-Assyrian religion as shown not merely by the extensive omen texts, dealing specifically with divination through the liver,<sup>41</sup> but by the frequent allusions to the rite in historical inscriptions that one is tempted to set up the thesis that the original purpose of sacrifice among the inhabitants of the Euphrates Valley was to ascertain through the sacrificial animal what the future had in store or what the gods had in mind,—this purpose taking precedence of other views of sacrifice such as tribute or alliance with the deity.<sup>42</sup> However this may be, the animal, so far as the evidence goes, invariably chosen for purposes of divination was the "sheep,"<sup>43</sup> and there is one instance<sup>44</sup> in which the combination Lu and Bat occurs in a "liver" divination text to designate the "sacrificial sheep" the liver of which is to be examined as a means of divination. It is with this use of the term that I propose to connect the designation Lu-Bat for "planet." The sheep being the common animal of divination, the term acquired the general force of an "omen" precisely as in Latin we have *auspicium*, originally an augury through "bird observation," *i. e.*, the noting of the flight of birds, becoming the generic term for any kind of an augury, because of the prominence of "bird observation" as a means of divination. Still

ideograph for "liver" (see Jastrow, "Signs and Names for the Liver in Babylonian," in *Zeits. für Assyriol.*, XX., p. 105, seq. and p. 127) and the combination thus having the force of "liver omen." The association leading from "dead" to "omen" thus becomes intelligible, since the "dead" or "sacrificed" animal is the medium for procuring an omen.

<sup>41</sup> Over 1,000 of the circa 30,000 fragments of the royal Library of Ninevah are "liver" divination texts. See Jastrow, "Religion Babyloniens und Assyriens," II., p. 211, note 1, and p. 222, note 2.

<sup>42</sup> See Jastrow, *o. c.*, II., p. 217.

<sup>43</sup> So, *e. g.*, in the case of the official reports to Assyrian Kings, in the prayers connected with the divination rite as well as in the omen collections. See Jastrow, *o. c.*, II., pp. 281, 289, 301, 307, 308, etc.; "Cun. Texts," XX., Pl. I, 1; Boissier, "Documents assyriens relatifs aux Présages," p. 97, 11.

<sup>44</sup> Boissier, *l. c.*, p. 212, 27. Lu(Nita) Bat (u) = *immêru nîtu*.

more striking is the analogy offered by the usage in Greek where the word for bird, *ὄρνις* or *διωνός*, has acquired the force of "omen."<sup>45</sup> The planets, accordingly, were called "sheep" because the purpose for which they were observed was to serve as "omens," and this view is confirmed by a statement of Diodorus (Bibl. Hist. II., 30) that the Babylonians (or "Chaldeans" as he calls them) called the planets *ἡρμενεῖς*, "interpreters," because "they reveal (or "interpret) the intention of the gods to men." The term used by Diodorus accurately reproduces the force of Lu-Bat in the sense of an "omen" or "interpretation" of the will and purpose of the gods. If this explanation be admitted, we would thus have a direct evidence of the dependence of astrology upon hepatoscopy, in accord with the reasonable assumption on *a priori* grounds of the rise of astrology subsequent to hepatoscopy. The justification for thus assuming a bond uniting astrology and hepatoscopy is furnished by the evidence for an analogous condition among the Etruscans whose method of hepatoscopy has many points in common with the Babylonian-Assyrian rite.<sup>46</sup> On the famous bronze model of a liver found near Piacenza<sup>47</sup> and which, dating from about the third century B. C., was used as an object lesson for instruction in hepatoscopy, precisely as the clay model of a liver dating from the Hammurabi period was used in a Babylonian temple school,<sup>48</sup> we find the edge of the liver divided into sixteen regions with the names of the deities inhabiting them, corresponding to divisions of the heavens in which the gods have their seats, while on the reverse side there is a line dividing

<sup>45</sup> See the passage in the Birds of Aristophanes ll. 719-22 to which my colleague Prof. Lamberton directed my attention and Xenophon, *Anabasis*, III., 2, 9, which Dr. R. G. Kent, of the University of Pennsylvania, kindly pointed out to me.

<sup>46</sup> See Thulin, "Die Etruskische Disciplin," I. (Göteborg, 1905), p. xii, seq.

<sup>47</sup> It is sufficient for our purposes to refer to two recent treatises on this remarkable object (a) Thulin, "die Götter des Martianus Capella und der Bronzeleber von Piacenza" (Giessen, 1906), and Körte, "die Bronzeleber von Piacenza," in *Mitt. d. Kais. Deutsch. Arch. Institut* (Römische Abteilung), XX., pp. 349-379.

<sup>48</sup> Published in "Cun. Texts," VI., Pls. 1 and 2 (with photograph). See Boissier's first attempt at an interpretation, "Note sur un Monument babylonien se rapportant à l'Extispicine" (Genève, 1899). I hope ere long to publish the results of my study of the inscription on this object.

<sup>49</sup> See Körte, *l. c.*, p. 356.



the liver into "day" and "night."<sup>49</sup> Professor Körte, in a study of this remarkable object, summing up the results of many years of research, explains this by showing that the liver was regarded as a microcosm reflecting the macrocosm,<sup>50</sup> or, in other words, the liver of the sacrificial animal from being originally a reflection of the soul or mind of the god to whom the animal was offered, was brought into connection with the observation of the heavenly bodies revealing the intention of the gods acting in concert. This combination of hepatoscopy with astrology likewise points to the latter system of divination as the later one, dependent in some measure upon the earlier method of divining through the liver.

This leads us to the last two points to be considered here, the relationship of Babylonian-Assyrian astrology to astronomy and the spread of astrology from the Euphrates Valley to other peoples. While astrology even in its most primitive phases assumes some knowledge of astronomy, it stands to reason that since the sole purpose for which the planets and stars were observed was as a means of securing omens, there could be no genuine interest in astronomical lore, pure and simple. As the scope of astrology increased, more stars were added to the field of observation, with each succeeding ages further details of the movements of the planets were noted, and groups of stars were combined into constellations of a more or less fanciful character. It became necessary for purposes of instruction in astrology to systematize and synthesize the knowledge thus acquired from empirical observation. In the course of time a considerable body of "school" literature thus took shape in the form of lists of stars, with attempts to locate them and to set forth some of the phenomena connected with them.<sup>51</sup> For the practical purpose of regulating the calendar further pedagogical aids were devised, and

<sup>49</sup> Körte (p. 362) expresses himself as follows "Die Leber, der Sitz des Lebens nach antiker Auffassung, erscheint als ein Abbild des Weltganzen im kleinen. Wie dieses ist sie in eine rechte und in eine linke Hälfte, eine Tages—und Nachtseite geteilt. Die Trennungslinie entspricht der Ost-Westlinie des Weltalls. Wie das Himmelsgewölbe ist ihr Rand in 16 Regionen geteilt, in denen Götter walten und Zeichen geben können."

<sup>51</sup> As examples of such lists see II. Rawlinson, Pl. 49, Nos. 1, 3, 4; III. Rawlinson, Pl. 57, No. 6, and the texts entered in the Index to Bezold's "Catalogue of the Cuneiform Tablets of the Kouyunjik Collection," p. 2096. These lists in the royal library of Nineveh revert to older Babylonian originals.

thus at a comparatively early age the seeds for a genuine science of astronomy were planted. The fact, however, is significant that, with perhaps some exceptions, we have in the library of Ashurbanapal, representing to a large extent copies from older originals, no texts that can properly be called astronomical.<sup>52</sup> For this reason a reaction has set in among Assyriologists against the view formerly held that astronomy was cultivated at an early period in Babylonia and Assyria.<sup>53</sup> It is certainly significant that the astronomical tablets so far found belong to the latest period and in fact to the age following upon the fall of the Babylonian empire.<sup>54</sup> While we must be warned against pressing the argument *ex silentio* too far, still there is sufficient evidence to warrant the conclusion that the most glorious period of Babylonian astronomy falls in the fourth to the second centuries before this era, that is to say, within the period of the Greek occupation of the Euphrates Valley. According to Kugler,<sup>55</sup> the oldest dated genuinely astronomical tablet belongs to the seventh year of Cambyses, *i. e.*, 522 B. C., although it shows evidence of having been revised on the basis of an older original. We also find evidence of changes both in the astronomical terminology and in the order of the planets after c. 400 B. C.,<sup>56</sup> so that while we are justified in going back to the neo-Babylonian dynasty as the point of departure for the beginnings of a genuine astronomical science, it would be rash to go much farther back than this. At all events,

<sup>52</sup> K. 9794 appears to be purely astronomical. See Bezold, *o. c.*, Vol. V., p. xxv. and iii., p. 1039; also Jeremias, "das Alter der babylonischen Astronomie" (Leipzig, 1908), p. 21.

<sup>53</sup> For a fuller discussion of the recent literature on the subject see Jastrow, *o. c.*, II., pp. 232-434. Kugler, in "Kulturhistorische Bedeutung der Babylonischen Astronomie" (*Vereinsschriften der Görres-Gesellschaft*, 1907, III., pp. 38-50), maintains the late origin of Babylonian astronomy. His views have been accepted by Boll, "die Erforschung der Antiken Astrologie" in *Neue Jahrbücher für das Klassische Altertum*, I. Abteilung, Bd. XXI., pp. 103-126) and others, while Jeremias ("das Alter der babylonischen Astronomie") and the adherents of the Winckler school cling to the view that astronomy took its rise in the early period of Babylonian history. For a general summary of our present knowledge of Babylonian astronomy, on the basis chiefly of Kugler's researches, see the two articles by Schiaparelli in the *Rivista di Scienza*, III., pp. 213-259, and IV., pp. 24-54.

<sup>54</sup> See Kugler, "Sternkunde und Sterndienst in Babel," I., p. 2.

<sup>55</sup> Sternkunde, p. 61.

<sup>56</sup> *o. c.*, pp. 12, 13, 22, 62, etc.

it is not until we reach the days of the Seleucidian and Arsacidian dynasties that we find astronomical calculations of the movements and of the position of the moon and planets in full swing.

It can hardly be regarded as accidental that the flourishing period of Babylonian astronomy should thus be coincident with the time when, according to definite evidence, Babylonian astrology passed over into Greece. "The conquest of Alexander," as Bouché-Leclercq tersely puts it, "threw down the barriers hitherto separating races and civilizations."<sup>57</sup> To Berossus, the "Chaldaean" priest who wrote in Greek a history of Babylonia and Assyria, the Greeks themselves ascribe the introduction of astrology into their midst. Settling in the island of Cos, the home of Hippocrates, Berossus himself taught the Babylonian system to the students whom the fame of the great physician had attracted to that place.<sup>58</sup> The fragments preserved of the writings of Berossus,<sup>59</sup> few as they are, suffice to show that he gathered his material direct from the sources, and there is therefore no reason to question that he followed conscientiously the methods laid down in the Babylonian collections of astrological omens. While it is of course possible and indeed probable that through the contact with the Persians the Greeks may have heard of the Babylonian system of divining the future through the stars, it is certain that astrology did not take a definite hold on the Greeks and become part of their intellectual outfit until the days of Berossus, *i. e.*, till about the beginning of the third century B. C. A few centuries sufficed to transform Babylonian astrology under the influence of the Greek spirit from the character of an "oriental religion" which as Bouché-Leclercq<sup>60</sup> recognized it had at the time of its adoption, into the appearance of a science. Already advanced students of astronomy, the Greek physicists combined astrology with the principles and speculations of mathematics and brought it into accord with the current systems of philosophy until it became a genuine expression of the Greek spirit and an integral part of Greek culture. A feature which the Greeks introduced and which

<sup>57</sup> *L'Astrologie Grecque*, p. 35.

<sup>58</sup> Vitruvius, *de Architectura*, IX., 6. See also Bouché-Leclercq, *o. c.*, pp. 2 and 37.

<sup>59</sup> Cory, "Ancient Fragments," pp. 51-69.

<sup>60</sup> *o. c.*, p. I.

of itself served to change the aspect of the Babylonian system was the perfection of a method whereby the fate of the individual was brought into connection with the stars. The science of genethliology<sup>61</sup> or the casting of the individual horoscope from the position of the stars at the time of an individual's birth is a *distinctly* Greek contribution. The insignificant role that the individual plays in all phases of divination, except in the case of the accidents and unusual incidents that happen to him and which were therefore looked upon as signs sent by the gods to the individual as such, prevented the rise of the thought that the activity of the gods as shown in the heavens had any bearing on the fate of the individual. As we have seen, astrology, just as hepatoscopy, concerned itself in Babylonia and Assyria with the general welfare and the public state. There was no place in either of the two great systems of divination for the individual and we may go a step farther and assert that it was contrary to the entire spirit of the Babylonian-Assyrian religion to suppose that the gods concerned themselves with the individual sufficiently to give him as such, through the stars or through the liver of a sacrificial animal, an indication of what they purposed doing.<sup>62</sup> It was different in Greece where long before the time that Babylonian astrology was assimilated to Greek culture, the individual had asserted himself to an extent undreamed of in the Euphrates Valley. Instead of an intellectual oligarchy with all learning confined to priestly circles, corresponding to the concentration of all political power in the hands of a few privileged families, we have in Greece a republic of letters with an independence of thought only surpassed by the strength of individualism in the political sphere. Religion had long ceased to be the controlling factor or at least the predominant

<sup>61</sup> Bouché Leclercq, *l. c.*, p. 49, while noting that there is no trace of the application of the astrology to the individual horoscope in cuneiform texts, is disposed to attribute this to the dearth of material. Since he wrote his great work that material has largely increased, and it is perfectly safe to conclude that this phase of astrology *never* existed in the Euphrates Valley.

<sup>62</sup> If in a few very late texts (cf. Bouché-Leclercq, *l. c.*, p. 50) we find entries of the birth of a child with the mention of the aspect of the moon, planets and constellations, this is to be ascribed to Greek influence as Bouché-Leclercq himself suggests. Some Greek astrologers even went so far, according to Vitruvius (*l. c.*), as to cast the horoscope of an individual from the time of conception.

factor in Greek civilization. One science after the other had freed itself from the thralldom of religious tradition and, accordingly, astrology, when introduced into Greece, did not become a part of the Greek religion but an element of Greek *science*. Passing on to the Romans<sup>63</sup> as an integral part of Greek culture, and becoming with the spread of Roman authority the general possession of the ancient world, astrology, because of its indissoluble association with astronomy, mathematics, and the philosophical systems of Greece, became part of the heritage of Greece to the world and took on in time the aspects of a religious cult.<sup>63a</sup> With the revival of Greek influence through the intellectual movement following upon the rise and spread of Islamism, astrology took a firm hold on the choice minds of mediaeval Europe by the side of such a force as Aristotelianism,<sup>64</sup> and continued to sway men's minds till the threshold of modern scientific thought, when it was swept away with so many other cherished traditions from the broad highway of science into the byways where it still flourishes at the present time and will no doubt continue to do so for a long time to come. Though somewhat more complicated in its processes, mediaeval and modern astrology is practically identical with the form it took on in Greece.<sup>65</sup> Not only did Greek astrology make its way throughout the West but it spread also to the East, for it has been definitely ascertained that what we find of it in India and even in China is due to the spread of the sphere of Greek influence;<sup>66</sup> and the same holds good for Egypt, where it begins to flourish with the rise of Hellenistic culture.<sup>67</sup>

<sup>63</sup> Bouché-Leclercq, *l. c.*, Chap. XVI., "L'Astrologie dans le Monde Romain" and "Cumont," "Les Religions Orientales dans le Paganisme Romain" (Paris, 1907), Chap. VII.

<sup>63a</sup> See Cumont, *l'Influence religieuse de l'Astrologie dans le Monde Romain* (Transactions of the 3d International Congress for the History of Religions, II., pp. 197-198).

<sup>64</sup> Bouché-Leclercq, pp. 624 seq.

<sup>65</sup> Compare for example the ideas associated with the planets in a modern manual of astrology like Ellen H. Bennett's "Astrology" (New York, 1897), pp. 93-100, with Bouché-Leclercq's statement of the Greek views ("L'Astrologie Grecque," pp. 93-101 and 311-326).

<sup>66</sup> Thibaut, "Astronomie, Astrologie und Mathematik," in Bühler-Kielhorn, "Grundriss der Indo-Arischen Philologie," III., 9, p. 15, and Kugler, "Kulturhistorische Bedeutung der babylonischen Astronomie," p. 49.

<sup>67</sup> It is one of the many merits of Bouché-Leclercq to have demonstrated



We thus find the source of all astrology in the ancient world in the system that arose in the Euphrates-Valley; and in view of this it will be admitted that the thorough study of Babylonian-Assyrian astrology is a factor of considerable importance in tracing the intellectual development of mankind. Coming back, therefore, to our immediate subject we have the curious phenomenon that about coincident with the period when a genuine science of astronomy takes a firm footing in Babylonia, astrology begins its triumphant march throughout the world. It is tempting to suppose that we have in this phenomenon the symptom of an "exchange" of influences that, while on the one hand Babylonia gave astrology to Greece, the contact with the scientific spirit of Greece resulted in giving an impetus to astronomical investigations in Babylonia. The possibility, indeed, of Greek influence on Babylonian astronomy was suggested by Bouché-Leclercq and is favored by Kugler.<sup>68</sup> Since, as now appears, the credit for the discovery of the precession of the equinoxes rests with the Greek astronomer, Hipparch, who announced it c. 130 B. C., and since it would indeed appear that in the second century B. C. the Babylonians, according to Kugler, were still ignorant of this principle, there is certainly every reason to suppose that the Babylonians were in this instance the pupils, and the Greeks the teachers. On the other hand, the Greek astronomers seem to have obtained from the Babylonians the names for the constellations of the ecliptic which we still use at the present time. Certainly, for the beginnings of their astronomy the Babylonians are not indebted to the Greeks since those beginnings reach back beyond the contact of Orient with

in his great work on Greek astrology the worthlessness of the traditions which ascribe Greek astronomy and astrology to an Egyptian origin. See especially the important note ("L'Astrologie Grecque," pp. 51-52) from which it appears that "Chaldean" and "Egyptian" are used almost interchangeably by uncritical Greek and Roman writers who hand down more or less fanciful traditions. Since Boll ("Sphæra," p. 159 seq.) and others have demonstrated the late origin of the zodiac of Denderah, the chief evidence for the early introduction of astronomy in Egypt has fallen away; and there is no reason for assuming that astrology flourished in Egypt before the Ptolemaic period.

<sup>68</sup> Bouché-Leclercq, *o. c.*, p. 50 and Kugler, "Kulturhistorische Bedeutung der babylonischen Astronomie," p. 48.

Occident, but that would not preclude the possibility of influences from the side of Greece at a later stage in the development of astronomical lore.

To account for the point of departure for the unfolding of a genuine science as astronomy, independent of merely empirical observations in the interest of astrology, and which as we saw<sup>69</sup> dates from the sixth century B. C., we have another factor entering into Babylonia about this time that must have exerted a profound influence—the appearance of Persia on the scene and with it the advanced form of faith known as Zoroastrianism and which by comparison with the emphatically polytheistic conceptions of the Babylonian religion was superlatively rationalistic. Contact with a strange culture is always attended by an intellectual stimulus, and this takes place whether the contest be friendly or hostile. Though the Persian rulers even after Darius with whom the full sway of Zoroastrianism may be said to begin, maintained a conciliatory attitude towards the gods of Babylonia, Cyrus going so far as to claim that his conquest of the country was in the interest of Marduk,<sup>70</sup> nevertheless, the presence of a totally different religion, recognized as the official one by the Persian rulers from the days of Darius on, must have acted as a disintegrating element that led to a decline in the belief in the Babylonian gods and to a corresponding weakening of the hold that the official rites had on the people. I venture to think that the influence of Zoroastrianism, bringing in its wake—as did Christianity and as did Islamism—a wave of intellectual advance, is the factor which accounts for the definite separation of the study of the heavenly phenomena from being merely an adjunct to a system of divination, to take its position as a genuine and independent science. A further impetus to the new science was given by the contact with Greek culture with the further possibility of a direct influence of Greek astronomical theories and methods on the investigations of the Babylonian priests.

The advance of astronomy must, however, have reacted also on the basic principle which we have seen underlay Babylonian-Assyrian astrology. Though even the *bârû*-priests, while still com-

<sup>69</sup> See above, p. 667.

<sup>70</sup> Hagen, *Cyrus-Texte* in "Beiträge zur Assyriologie," II., p. 229.

pletely enthralled by astrology, must have been impressed with the domain of law in the movements and phenomena of the heavens, there remained enough scope for caprice in the more unusual phenomena which the imperfect knowledge placed outside of the sphere of regularly working law. With the gradual reduction of this scope until through astronomical calculations even such phenomena as eclipses came within the range of recognized law, the belief in astrology must have suffered a decline, at all events in the minds of the better informed priests. Astronomy and astrology presented a contrast not unlike that which in modern times is frequently represented by science and religion and though no open conflict ensued, the growth of astronomy must have involved the decline of astrology. If the data of astrology are all due to the workings of inevitable and clearly recognized eternal laws, there is no room for any spontaneity on the part of the gods, so far at least as the stars manifest divine activity. Every advance in astronomy, therefore, removed a stone from the foundation on which the structure of astrology was reared, until the stability of the entire structure was endangered. The last three centuries before our era represent in general a period of declining faith in the gods both in Babylonia as well as in Greece and elsewhere. The old order throughout the ancient world of cultural development was passing away, and the growing strength of astronomy is in itself symptomatic of the new order destined to take the place of the old. It is no unusual phenomenon to find a great civilization handing over to posterity as a legacy at the period of its decay—a superstition instead of a real achievement. "The evil that men do lives after them; the good is oft interred with their bones" applies to nations as to individuals, and so it happens that while the wholesome fruits of the Babylonian-Assyrian civilization were not entirely lost, the overripe products with the odor of decay pervading them were the first to be exported to other climes. What became proverbial among Greeks and Romans as "Chaldaean wisdom" is not the astronomy of Babylonia but the astrology which, after having spent its force in the soil in which it arose, takes root elsewhere and soon flourishes more luxuriantly than it ever did in its native heath. We have, however, also seen that in the care of others the original plant was modified through the transfer from

the Orient to the Occident. Astrology in Babylonia declines as astronomy grows, for the very reason that astronomy is an outgrowth of astrology, representing the evolution of a science, by the breaking away from attachment to a religion and a cult. In Greece astronomy arises as do other sciences through the growth of the spirit of investigation. There was so far as we can see no religious tradition out of which or in opposition to which astronomy took its rise. There is no antecedent astrology from which astronomy emerges as the butterfly from the chrysalis. Therefore, astrology coming to the Greeks as a novel conception, with all the force of an apparently practical application of a scientific theory, suggesting the possibility of a direct communion with the arbiters of human fate—the conscious goal or unconscious hope of all religions—it was capable of being assimilated to the already firmly established astronomy. Astrology as further developed by the Greeks became merely one of the phases of astronomy, as is shown by the synonymy of the two terms, *ἀστρολογία* and *αστρονομία*<sup>71</sup>—a condition which persisted till mediaeval scholasticism, which distinguishes merely as a matter of definition between “natural astrology” or theoretical astronomy and “judicial astrology” or divination through the stars as the application of the theory to human life.

Lastly, if another suggestion be permitted, the “Chaldaeans” whom we encounter so frequently in Greek and Roman writers acting as “diviners” on such various occasions, appear to be indeed Babylonian *bârû*-priests or the disciples of these priests who, because of the decline of faith in astrology in the centers in which it arose, left their homes to seek their fortunes elsewhere. As with the growth of astronomical lore, the hold of the old system of astrology was loosened, the occupation of the *bârû*-priests was gone. Their condition was not unlike that of the Levites who, as the priests of the local sanctuaries in Palestine, were deprived of their standing and livelihood with the decline of these sanctuaries through the gradual concentration of Jahweh worship in the central sanctuary of Jerusalem. These Levites wandered to Jerusalem where, according to the Priestly Code, provision was made for them by assigning them to posts as assistants to the *kôhanim*—the legitimate priests of the cen-

<sup>71</sup> See Bouché-Leclercq, *o. c.*, p. 3, note 2.



tral sanctuary.<sup>72</sup> The *bârû*-priests of Babylonia in their capacity as astrologers wandered to the West, there to ply their trade for which a market was no longer forthcoming in their own homes. Babylonian astrology, enjoying the popularity in Greece and in the Roman empire frequently granted to a foreign importation in preference to a home industry, became the fashion of the Occident during the centuries that marked the decline of belief in the gods of Greece and Rome and that offered a hospitable welcome to all kinds of strange faith and mystic cults, until the term "Chaldaean" became synonymous with "astrologer." In time it was no doubt applied to the one who divined through the stars irrespective of his origin.<sup>72a</sup> Besides astrology, hepatoscopy was also practiced by these "Chaldaeans,"<sup>73</sup> but both forms of divination, being derived from an official cult and practiced purely as a profession that was presumably not without profit suffered, as was inevitable, a degeneration, with the result that a measure of reproach became attached to the term "Chaldaean," which acquired almost the force of trickster and deceiver. It was nevertheless fortunate that the term survived as a fingerpost, directing us to the land in which the system of divination arose that after strange vicissitudes has survived in the form as modified under Greek influences and with some additions in the mediaeval period, to our own days, still finding many devotees in circles where one would hardly expect to encounter them.<sup>74</sup>

The degenerating process through which the term "Chaldaean"

<sup>72</sup> See *e. g.*, Baudissin, *Geschichte des Alttestamentlichen Priesterthums* (Leipzig, 1889), p. 287.

<sup>72a</sup> So, *e. g.*, Teukros, the author of a Greek treatise on astrology, is called "the Babylonian" evidently in the sense of "astrologer." See the fragments of this treatise published by Boll ("Sphæra," pp. 16-21) who places Teukros in the first century of this era.

<sup>73</sup> See the story told by Polyænus, "Strategicon," IV., 20, of the deception practised upon the army of Attalus I. of Pergamon by Soudinos "a Chaldaean augur" who writing the words "victory of the king" (*βασιλευς νικη*) backwards on the palm of his hand, pressed the smooth side of the liver of a sacrificial animal on his hand, and then held the liver with the significant words inscribed on it to the gaze of the army, who regarded it as a sign sent by the gods. See also, above, p. 650, note 13.

<sup>74</sup> The late Richard Garnett is only one of many examples of men otherwise abreast with modern thought who cling to the faith in the revelations of the stars.



passed must not, however, lead us to the conclusion, which would be decidedly false, that astrology when it passed over to the West became wholly at the mercy of professional tricksters. This is but one phase of the subject which, seriously cultivated by Greek physicists, became bound up as we have seen with advanced forms of astronomy, mathematics and philosophical speculation. It is the old Babylonian astrology directly imported by "Chaldeans" as professional astrologers that degenerated into a dishonest trade, whereas the modification of the Babylonian system under the influence of the Greek scientific spirit was raised to the dignity of a genuine science; and belief in it remained an integral part of science throughout the middle ages. In our days when the new scientific spirit has definitely broken with astrology, we are witnessing a process not unlike that which set in when faith in the Babylonian system declined in the land of its birth. Whatever justifiable basis (if any) it may have had is entirely obscured by those who exploit it as a profession. The modern "astrologers" are not the Greek astronomers attaching to their science a divinatory aspect, but the old *bârû*-priests in a new garb, plying a trade that flourishes through the readiness of people to be deceived—a readiness that amounts almost to willingness. Why then, it may be asked, search out the follies and superstitions of the past? Bouché-Leclercq<sup>75</sup> supplies us with the answer when he says "that it is not a waste of time to find out how other people wasted theirs."

<sup>75</sup> "L'Astrologie Grecque," p. ix.